

ON AUREOLEJEUNEA Schust. and BRACHIOLEJEUNEA

PARAMICOLA Herzog

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The genus Aureolejeunea Schust. was briefly described in this journal (Schuster, 1978) and a review (with illustrations) appeared recently in *Nova Hedwigia* (Schuster, 1986; in press). In this last paper one of the species treated in some detail is Aureolejeunea paramoensis Schust. (cf. Schuster, 1986, figs. 3-4), unique in the genus in the rather compressed-trigonous perianths which bear accessory plicae distally, so that, on young perianths at least, there are as many as 3 dorsal, 5 ventral, and 2 lateral plicae (cf. fig. 3: 1, 4-7 in Schuster, l.c.).

In spite of the stem anatomy, typically Ptychantoid, and the distinct brown color of Aureolejeunea, it was shown that the seta anatomy places the genus clearly in the Lejeuneoideae. Here it was stated that its affinities were most nearly with Omphalanthus and Leucolejeunea. The often checker-board arrangement of cells recalls Omphalanthus, as does oil-body form (2-4 granular-botryoidal or botryoidal oil-bodies per cell), yet the presence of wall pigments and the elongated leaf lobule (which, in turn, suggests an affinity to Leucolejeunea) suggest that Aureolejeunea is not particularly close to Omphalanthus.

Gradstein et al. (1981) give a key to 5 taxa they refer to Omphalanthus, including one species, O. paramicola (Herz.) Gradst., comb. n., which was based on Brachiolejeunea paramicola Herz., *Hedwigia* 74: 95, fig. 8a-b, 1934. Gradstein et al. (l.c.) characterize this species as with a flattened perianth that is "6-8-plicate." The plant is further characterized as "reddish-brown to dark brown, autoecious . . . with 2 innovations." These features, in my opinion, exclude Brachiolejeunea paramicola from Omphalanthus s. str. Oil-bodies of Aureolejeunea were described (Schuster, 1978, 1986) as occurring "2-4 per cell, large (length 0.3-0.8 longer diam. of cell lumen), clearly and ± coarsely botryoidal." The diagnosis of the oil-bodies of Brachiolejeunea paramicola in Gradstein et al. (l.c., p. 245) is almost identical: oil-bodies "2-4 per leaf cell, . . . coarsely granulose." Their figure (fig. 1:4) shows finely botryoidal oil-bodies, not substantially different from those I described for Aureolejeunea. It is, also, not substantially different from what is seen in Omphalanthus filiformis, the generic type of Omphalanthus, in which I have seen 1-4 large, coarsely granular-botryoidal oil-bodies (Schuster, 1987).

It is therefore clear that Herzog (1934) was far off the mark

in ascribing his plant to Brachiolejeunea (subfam. Ptychantoideae; with homogeneous, minute, numerous oil-bodies and semicordate trigones; with a very different stem anatomy; with ental hyaline papillae; with a 16 + 4 seta; cf., Schuster, 1980). Gradstein et al. (l.c.), placing it in Omphalanthus, are much closer. But, in my opinion, the plant is clearly a member of Aureolejeunea, since (a) Omphalanthus does not secrete wall pigments; (b) Omphalanthus has a perianth that is either inflated or bluntly trigonous; (c) all taxa properly assigned to Omphalanthus have obliquely subquadrate or short-oblong lobules, with obliquely ascending keel -- giving the leaf a highly diagnostic aspect (see, e.g., Evans, 1907, pl. 3:1-3); (d) subfloral innovations in Omphalanthus are normally 1, rarely 0 or 2 (mixed in single populations!); bract keels are unwinged (cf. Evans, l.c., pl. 3:1, 7-8) and have an exceedingly reduced lobule. I concluded (Schuster, 1986) that, on the basis of these criteria "confusion with Omphalanthus is hardly possible." Confusion with Brachiolejeunea is even less possible, although the color may throw the unwary off!

On that basis, therefore, Brachiolejeunea paramicola Herzog is transferred to Aureolejeunea Schust., as follows:

Aureolejeunea paramicola (Herz.) Schust., comb. n. [Basionym: Brachiolejeunea paramicola Herzog, Hedwigia 74:95, fig. 8a-b, 1934].

It seems likely that A. paramoensis Schust. may prove to be identical. However, A. paramicola is described as with a 6-8-plicate perianth; that of A. paramoensis is 8-10- plicate. Further collections are needed.

FOOTNOTES

1/ Indeed, Gradstein (1985, p. 18) separates Omphalanthus from Aureolejeunea on the basis of the "stems ± pendulous, long and slender, little branched. Ventral merophytes 4-12 cells wide" vs. "creeping to ascending, branching infrequent or frequent. Ventral merophytes (2)4 cells wide" (for Aureolejeunea). On these bases, Brachiolejeunea paramicola is, clearly, an Aureolejeunea! The copious branching in Aureolejeunea is shown in cladographs of A. fulva Schust. (Schuster, 1980, fig. 659:9-10) and A. paramoensis Schust. (Schuster, l.c., fig. 659:11).

2/ In Schuster (1963, p. 56) it is keyed out with Leucolejeunea, and characterized as being "green."

References

Evans, A. W. 1907. Hepaticae of Puerto Rico. 7. Stictolejeunea, Neurolejeunea, Omphalanthus and Lopholejeunea. Bull. Torrey Bot. Club 34:1-34, pls. 1-4.

Gradstein, S. R. 1985. A guide to the holostipous Lejeuneaceae. Pp. 13-29, in Nova Hedwigia, Beih. 80:1-253.

_____, R. Matsuda & Y. Asakawa. 1981. Oil-bodies and terpenoids in Lejeuneaceae and other selected Hepaticae. Jour. Hattori Bot. Lab. 50:231-48.

Herzog, Th. 1934. Die Bryophyten der Andenreisen von C. Troll. Hedwigia 74:79-114.

Schuster, R. M. 1963. An annotated synopsis of the genera and subgenera of Lejeuneaceae. Nova Hedwigia, Beih. 9:1-203.

_____. 1978. Studies on Venezuelan Hepaticae, II. Phytologia 39(6); 425-32.

_____. 1980. The Hepaticae and Anthocerotae of North America. Vol. IV. Pp. i-xix, 1-1334, figs. 476-765. Columbia University Press, New York, N. Y.

_____. 1986. Venezuelan Hepaticae, IV. Amphilejeunea Schust. and Aureolejeunea Schust. Nova Hedwigia [in press].

_____. 1987. The oil-bodies of Lejeuneaceae. [in press].